

Draft Memorandum

FROM: Bruce Herbold and Spreck Rosecrans
 TO: DNCT
 DATE: April 6, 1999
 RE: Three approaches to an EWA

Since June 1998, when the DNCT began exploring the EWA in earnest, three methods have been proposed to account for the water involved. This memo is intended to summarize each approach and their pros and cons. The three approaches are not exclusive of each other; all could be components of our final product. In fact, all three methods have been used in the gaming efforts

Strict Accounting Approach

This is the primary approach used to date in the gaming exercise. In this approach water is produced into the EWA by some pre-determined sharing of the water generated by some action or project. Actions include some change in regulatory conditions by the regulating agency and projects are new elements of the state's water supply network in which the EWA has some stake. It is then the responsibility of the EWA operators to take this water from where it is generated and deliver it in the times and places that will benefit fish. We have assumed that management of this water is done in accord with a policy of non-interference with any other wateruser.

Pros

1. Amount of water each year is accountable
2. Water is fully transferable
3. No-harm provision is explicit
4. Water can be used for any purpose
5. Water can provide multiple uses

Cons

1. Water may not be generated in all years
2. Water lost if storage or conveyance is unavailable at any time.
3. Requires intensive management effort.
4. Could raise demands out of delta.

Contract Approach

Environmental Water Account (EWA) could enter a new contractual arrangement with the State and federal water projects. CalFed is expected to generate a substantial quantity of newly available water through its water use efficiency program, the NoName Group's

tools, and through enhancements to reclamation and watershed management. For the present State and Federal contractors this new water will augment their current deliveries. A new contract would allow the EWA to acquire water, for its own use, in a comparable fashion. This contract could vary with hydrology from year to year, as with most present contractors. Such a contract would use the same storage and conveyance features as all other contracts and would allow EWA water to be planned for and managed more easily. As long as the time and place of delivery did not conflict with the times and places of delivery of other users, conflict could be minimized. One suitable place of use for the EWA contract would be San Luis Reservoir on September 30 of each year. Such a guaranteed delivery could then be used in transfers to achieve all the actions desired of an EWA. DNCT has used this approach to represent the water generated into the EWA by CALFED's evapo-transpiration reductions and water use efficiency measures.

Work to date suggests that eliminating the E/I ratio might translate into a 120 TAF contract if AFRP is in the base and 70 TAF if it is not. Dave Schuster's work reportedly suggests that these numbers are greatly exaggerated. I believe that work with the JPOD and the 8350 cfs pumping capacity at the SWP suggests a contract size of about 200 TAF.

Contracts would reduce management of EWA water to deciding when to spend it rather than when to generate it. Contracts could be set for a short time period to allow all parties to revisit the adequacy and effects of the contract.

Pros

1. Amount of water each year is predictable
2. Managed by BOR/DWR same as other contracts until used.
3. Does not require constant management by EWA
4. Water can be used for any purpose
5. Water can provide multiple uses
6. Water generated anew in each year

Cons

1. Annual effects vary from average, if arranged to have 'no harm' on average it will have positive and negative impacts in individual years.
2. Contract could compete for access to facilities
3. Could raise demands out of delta.
4. Emphasis on present negotiation to set future contract size; modeling critical but may be misleading.

Credit Approach

The traditional approach to regulating the impacts of new water supply features is to identify their likely impacts and reduce them to acceptable levels. This approach is well

understood by all parties as typified in the kinds of new operating criteria included in the revised OCAP. This approach explicitly quantifies the impacts of each new project and addresses only those impacts in the regulations or mitigations required. Inherently, this approach encourages the projects to find flexible ways to meet the new conditions and restricts the kind of environmental protection that can be expected. Inclusion of AFRP delta actions in the modeling base can be viewed as an application of a crediting approach because the model automatically tried to minimize the actual impacts of the actions on project deliveries.

For purposes of an EWA, this approach works like a line of credit where specific conditions can be called for up to some limit of potential impact. The projects are then free to make-up the impact of these actions within the other constraints on their operations. For example, unlimited use of the joint point of diversion might increase project yield by, say, 150 TAF on average. Such unlimited use would result in increased effects of south delta entrainment which could be offset by the regulatory ability to call for 15 days of reducing exports by up to 10 TAF. Such impacts could often be made up and the contractors would receive higher annual deliveries in most years. For this approach to succeed it is important to identify all the impacts of each project in advance. For example, in-delta storage could be expected to affect estuarine salinity conditions, export pumping rates, operation of upstream reservoirs, and water quality in the delta and at the export facilities. Adequate regulations and/or mitigations must address all these impacts in advance.

Two lines of reasoning can be used to develop guidance on the amount of export reduction that might be appropriate for a given set of water supply tools:

1. Our gaming experience documents different levels of export reduction in various year types; it may be possible to use the gaming exercise as a tool for developing the necessary line of credit. Thus, we could get some of the benefits of an EWA without actually managing water in reality.
2. Modeling runs can be analyzed to determine the timing and magnitude of increase in exports attributable to each tool if unconstrained. The credit line should be adequate to address such impacts on sensitive species.

Pros

1. Impacts are directly tied to protective actions.
2. Requires no water management by regulatory agencies
3. Provides greater regulatory certainty of future conditions

4. EWA actions in one year cannot be constrained by debts accrued in previous year.
5. Only approach that avoids increasing delta demands.

Cons

1. Annual effects vary widely, although careful development can increase predictability.
2. EWA not competing for access to facilities.
3. Can not trade assets or change nature of action from year to year.
4. Emphasis on present negotiation to set regulatory limit; modeling critical but may be misleading.